



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,294	04/19/2004	Naoko Ito	8046-1017-1	1316
465 7590 08/25/2009 YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			EXAMINER GORTAYO, DANGELINO N	
			ART UNIT 2168	PAPER NUMBER
			MAIL DATE 08/25/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,294

Applicant(s)

ITO ET AL.

Examiner

DANGELINO N. GORTAYO

Art Unit

2168

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-30, 47, 51-53, 55, 56, 58, 59 and 61-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-30, 47, 51-53, 55-56, 58-59 and 61-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/13/2009 has been entered.

Response to Amendment

2. In the amendment filed on 7/13/2009, claims 17, 47, and 61-63 have been amended. The currently pending claims considered below are claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeyaraman (US Patent 6,377,957 B1) in view of Benson et al. (US Patent 6,202,085 B1)

As per claim 17, Jeyaraman teaches "A structured document processing system" (see Abstract)

"comprising: a network composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document composed of a plurality of elements" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of elements which are hierarchically organized in a tree structure" (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"the server device comprising an update manager for managing an update of the structured document using an updated minimum element of the structured document, wherein a top node of the updated minimum element is provided with the transfer object flag and update time information, wherein the updated minimum element has a minimum node tree structure including an updated portion of the structured document and is determined by referring to its transfer object flag," (Figure 3 reference 310, 312,

Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes and time stamp information, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and root node information)

“and a transmission section that identifies for transmission the updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified updated minimum element and its update time information to one of the client devices.” (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

“wherein each of the client devices updates a corresponding minimum element of the structured document currently stored in the client device depending on whether the update time of the received update time information is later than a last update time of the structured document currently stored in the client device” (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, wherein a time stamp is sent along with aggregate changes update to be utilized by a client to update data)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach “each of the client devices stores a duplication of the structured document”. Benson teaches “each

of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

As per claim 18, Jeyaraman teaches "the update manager instructs the transmission section to transmit the updated minimum element of the structured document when the structured document has been updated. (column 7 lines 19-24)

As per claim 19, Jeyaraman teaches "the update manager instructs the transmission section to transmit update information to one of the client devices when the structured document has been updated, the update information including identification information identifying the updated minimum element of the structured document" (column 7 lines 50-67)

As per claim 20, Jeyaraman teaches "the update manager manages the update of the structured document using an update time at which the update of the structured document occurs, wherein, when an update occurs at the node, the update manager instructing the transmission section to transmit update information to a client device, the

update information including the update time.” (column 5 lines 33-37, lines 48-54, column 7 lines 19-24)

As per claim 21, Jeyaraman teaches “when a client device receives the update information from the server device, the client device updates the structured document stored therein based on the update information received. ” (column 6 lines 17-23, column 7 lines 10-18)

As per claim 22, Jeyaraman teaches “each of the client devices comprises: a comparator for comparing the update time of the update information received is later than an updated time of the structured document currently stored therein;” (column 5 lines 33-38)

“and a transmission controller for requesting transfer of an updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein.” (column 5 lines 33-54)

As per claim 23, Jeyaraman teaches “the update manager transmits an updated minimum element of the structured document to a client device at a plurality of predetermined times.” (column 7 lines 19-24)

As per claim 24, Jeyaraman teaches “the update manager transmits update information to the client device at a plurality of predetermined times, the update information including identification information identifying an updated minimum element of the structured document.” (column 5 lines 48-54, column 7 lines 19-24)

As per claim 25, Jeyaraman teaches “the update manager manages the update of the structured document using an update time at which the update of the structured document occurs, the update information further includes the update time.” (column 5 lines 48-54, column 7 lines 19-24)

As per claim 26, Jeyaraman teaches “a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“wherein the server device transmits update information indicating that the structured document is updated to the gateway server device,” (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

“wherein the gateway server device comprises: an structured document manager for managing the duplication of the structured document stored in the client device;” (column 7 lines 4-24)

“an update information receiver for receiving update information from the server device;” (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

“and an update controller for transmitting the update information received from the server device to the client device.” (column 4 line 53 – column 5 line 17)

As per claim 27, Jeyaraman teaches “the update controller transmits the update information received from the server device to the client device at a plurality of predetermined times.” (column 7 lines 19-24)

As per claim 28, Jeyaraman teaches “when a client device receives the update information from the gateway server device, the client device updates the duplication of

the structured document stored therein based on the update information received.”
(column 6 lines 16-27, column 7 lines 10-24)

As per claim 29, Jeyaraman teaches “each of the client devices comprises: a comparator for comparing the update time of the update information received is later than an updated time of the structured document currently stored therein;” (column 5 lines 33-38)

“and a transmission controller for requesting transfer of an updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein.” (column 5 lines 33-54)

As per claim 30, Jeyaraman teaches “a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“wherein the server device transmits update information including an update time and the updated minimum element to the gateway server device,” (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

“wherein the gateway server device comprises: an structured document storage for storing the duplication of the structured document stored in the client device;”
(column 3 line 61 – column 4 line 52)

“an structured document manager for managing the duplication of the structured document for the client device and an update time thereof;” (column 7 lines 4-24)

"an update information receiver for receiving the update information from the server device; and an update controller for transmitting the updated minimum element of the structured document to a client device having the update time of the structured document stored therein, which is later than the update time included in the update information received from the server device." (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

As per claim 47, Jeyaraman teaches "A structured document updating method" (see Abstract) "in a network composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of elements which are hierarchically organized in a tree structure, (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

the method comprising the steps of: at the server device, a) managing an update of the structured document using an updated minimum element of the structured document, the updated minimum element including an updated portion of the structured document wherein a top node of the updated minimum element is provided with the transfer object flag and update time information, wherein the updated minimum element has a minimum node tree structure including an updated portion of the structured document and is determined by referring to its transfer object flag," (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes and time stamp information, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and root node information)

"and b) identifying for transmission the updated minimum element based on a location of the transfer object flag within the tree structure and transmitting the identified updated minimum element and its update time information to the client device, and at a client device receiving the updated minimum element and its update time information." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

c) updating a corresponding minimum element of the structured document currently stored in the client device depending on whether the update time of the received update time information is later than a last update time of the structured document currently stored in the client device. (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, wherein a time stamp is sent along with aggregate changes update to be utilized by a client to update data)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

As per claim 51, Jeyaraman teaches "when the update time of the update time information received is later than an updated time of the structured document currently

stored therein, requesting transfer of the updated minimum element of the structured document.” (column 5 lines 33-54)

As per claim 52, Jeyaraman teaches “an updated minimum unit of the structured document is transmitted to the client devices at a plurality of predetermined times.” (column 7 lines 19-24)

As per claim 53, Jeyaraman teaches “update information is transmitted to the client devices at a plurality of predetermined times, the update information including identification information identifying an updated minimum unit of the structured document.” (column 5 lines 48-54, column 7 lines 19-24)

As per claim 55, Jeyaraman teaches “the network further comprises a gateway server device performing protocol processing between the server device and each of the client devices,” (Figure 2 reference 204 and column 4 lines 18-65)

“the method further comprising the steps of: at the gateway server device, d) managing the structured document stored in each of the client devices;” (column 7 lines 4-24)

“e) receiving an update information from the server device;” (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

“and f) transmitting the update information received from the server device to a client device.” (column 4 line 53 – column 5 line 17)

As per claim 56, Jeyaraman teaches “in the step (f), the update information received from the server device is transmitted to the client device at a plurality of predetermined times.” (column 7 lines 19-24)

As per claim 58, Jeyaraman teaches "at the client device, when the update time of the update time information received is later than an updated time of the structured document currently stored therein, using the identification information to request transfer of the updated minimum unit of the structured document from the gateway server device." (column 5 lines 33-54)

As per claim 59, Jeyaraman teaches "the network further comprises a gateway server device performing protocol processing between the server device and each of the client devices," (Figure 2 reference 204 and column 4 lines 18-65)

"the method further comprising the steps of: at the gateway server device, storing the structured document stored in each of the client devices in an information storage;" (column 3 line 61 – column 4 line 52)

"managing the structured document for each of the client devices and an update time thereof;" (column 7 lines 4-24)

"receiving an update information from the server device at which an update of the structured document occurs;" (column 3 lines 59 – column 4 line 18, column 4 lines 18-46)

"selecting a client device having the update time of the structured document stored therein, which is later than the update time included in the update information received from the server device;" (column 4 line 66 – column 5 line 16, column 6 lines 43-57)

"and transmitting the updated minimum unit of the structured document identified by the identification information included in the update information received from the server device, to the selected client device." (column 4 line 53 – column 5 line 17)

As per claim 61, Jeyaraman teaches "A storage medium storing a computer program for updating a structured document in a network" (see Abstract)

"composed of a server device and a plurality of client devices," (Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"the server device storing a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of elements which are hierarchically organized in a tree structure," (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

the computer program at the server device comprising the steps of: a) managing an update of the structured document using an updated minimum element of the structured document, wherein a top node of the updated minimum element is provided

with the transfer object flag and update time information, wherein the updated minimum element has a minimum node tree structure including an updated portion of the structured document and is determined by referring to its transfer object flag," (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes and time stamp information, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and root node information)

"identifying for transmission the updated minimum element based on a location of the transfer object flag within the tree structure and transmitting the identified updated minimum element and its update time information to the client devices." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

"wherein each of the client devices updates a corresponding minimum element of the structured document currently stored in the client device depending on whether the update time of the received update time information is later than a last update time of the structured document currently stored in the client device" (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, wherein a time stamp is sent along with aggregate changes update to be utilized by a client to update data)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach “each of the client devices stores a duplication of the structured document”. Benson teaches “each of the client devices stores a duplication of the structured document” (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman’s system of propagating document updates to clients with Benson’s method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

As per claim 62, Jeyaraman teaches “A server device in a structured document processing system comprising a plurality of client devices,” (see Abstract)

“the server device storing a structured document composed of a plurality of elements” (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) “composed of a plurality of elements which are hierarchically organized in a tree structure” (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) “wherein each of the elements is a constituent unit of the structured document and has a node tree

structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"the server device comprising an update manager for managing an update of the structured document using an updated minimum element of the structured document, wherein a top node of the updated minimum element is provided with the transfer object flag and update time information, wherein the updated minimum element has a minimum node tree structure including an updated portion of the structured document and is determined by referring to its transfer object flag," (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes and time stamp information, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and root node information)

"and a transmission section that identifies for transmission the updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified updated minimum element and its update time information to one of the client devices." (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 -

column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach "each of the client devices stores a duplication of the structured document". Benson teaches "each of the client devices stores a duplication of the structured document" (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

As per claim 63, Jeyaraman teaches "A client device in a structured document processing system" (see Abstract, Figure 1, Figure 2, column 4 lines 18-38, wherein a system containing a server and a plurality of client devices is disclosed)

"comprising a server device that stores a structured document" (column 3 lines 23-35, column 4 lines 53-65, wherein a server coupled to a document database containing documents is disclosed) "composed of a plurality of elements which are

hierarchically organized in a tree structure, (column 4 lines 6-17, wherein documents stored in a document database are tree-structured) "wherein each of the elements is a constituent unit of the structured document and has a node tree structure having a tag node as its top node, wherein predetermined ones of the tag node are provided with a transfer object flag," (Figure 6A, column 5 lines 32-67, column 7 lines 26-40, column 8 lines 13-25, wherein data stored in a database are in a tree hierarchy to represent parts of a document, including a root node indicating the difference)

"wherein the server device manages an update of the structured document using an updated minimum element of the structured document, the updated minimum element including an updated portion of the structured document wherein a top node of the updated minimum element is provided with the transfer object flag and update time information, wherein the updated minimum element has a minimum node tree structure including an updated portion of the structured document and is determined by referring to its transfer object flag," (Figure 3 reference 310, 312, Figure 4 reference 406, 408, column 5 lines 33-67, column 6 line 51 – column 7 line 9, column 7 line 26 – column 8 line 11, column 9 lines 31-64, wherein the difference between the updated copy and the original copy is found in the server, indicating the necessary changes and time stamp information, and the update to specify manipulation of nodes using the tags of the nodes is created, composed of differences and root node information)

"and wherein the server device identifies for transmission the updated minimum element based on a location of the transfer object flag within the tree structure and transmits the identified updated minimum element and its update time information to the

client device.” (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, column 7 lines 10-14, lines 26-67, column 8 line 38 - column 9 line 40, wherein the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

“the client device comprising: a comparator for comparing the update time of the update time information received from the server device and a last update time of the structured document currently stored therein to determine whether the update time of the update time information is later than the last update time;” (column 5 lines 33-54, column 6 lines 10-23, lines 44-57, column 7 lines 10-18, wherein a time stamp is sent along with aggregate changes update to be utilized by a client to update data)

“and a transmission controller for requesting transfer of an updated minimum element of the structured document when the update time of the update information received is later than the updated time of the structured document currently stored therein.” (Figure 3 reference 314, Figure 4 reference 410, column 5 lines 33-54, column 6 lines 16-23, wherein an update request and the change commands identifying specific nodes are sent to clients by the server to update cached copies of a document)

Jeyaraman teaches that the system can check if a client contains a copy of a document (column 5 lines 26-35). Jeyaraman does not explicitly teach “each of the client devices stores a duplication of the structured document”. Benson teaches “each of the client devices stores a duplication of the structured document” (column 13 lines 31-56, wherein a local copy of a document is stored by a data replication system). It would have been obvious at the time of the invention for one of ordinary skill in the art to

combine Jeyaraman's system of propagating document updates to clients with Benson's method of synchronizing exact copies of data from sources to synchronizing clients without having to check if a copy is contained in a client. This would give the user the advantage of improving access time and performance by eliminating a step in the process of propagating changes to a document in a network. The motivation for doing so would be to provide a generalized synchronization model. (Benson, column 3 lines 39-48)

Response to Arguments

5. Applicant's arguments, see page 15, filed 7/13/2009, with respect to the rejection of claims 17-30, 47, 51-53, 55-56, 58-59 and 61-63 in regards to 35 USC 103(a) have been fully considered but they are not persuasive.

a. Examiner is entitled to give claim limitations their broadest reasonable interpretation in light of the specification. See MPEP 2111 [R-I]

Interpretation of Claims-Broadest Reasonable Interpretation

During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).

b. Applicant's arguments is stated as Jeyaraman in view of Benson does not teach an update object is a minimum element of the structured document, the document being composed of a plurality of the elements

In regards to the argument, examiner respectfully disagrees. As disclosed in the above rejection, Jeyaraman, discloses a method to send the changes made in hierarchically structured data composed of nodes in a tree organization between clients containing cached copies and a document server, and not a complete copy of the data (column 2 lines 2-24). In particular, the update is disclosed in column 5 lines 33-54 of Jeyaraman to be the differences between the data along with a timestamp to determine how long ago the previous update was made in a client. Column 6 line 51 - column 7 line 9 and column 7 line 26 - column 8 line 10 disclose the process of creating an update for hierarchically structured data. Specifically, the update process begins at the children node to determine differences between documents, then ascends up the tree to find the nodes containing differences in documents. There is also a process to remove nodes from the original tree which is not present in the new tree representing the update needed to be made on a document, thereby collapsing the tree to a minimum amount needed to make an update to documents. As interpreted by the examiner, the update of Jeyaraman is composed of a node tree representing the differences detected between an original and updated copy of a document, as well as a time stamp, created by detecting the differences in node trees by starting from leaf nodes and ascending to find differences, and creating a tree-

structured set representing changes, similarly to the updated minimum element of the instant application. Thus, the update sent by the prior art of Jeyaraman is composed of a node tree comprised of the differences of data between documents, as well as operations necessary for the cached copies stored in a client to be updated, and not complete copies of the documents themselves. With the documents represented by trees, the update is created to transform an original document composed of node tree to an updated version of the document through an update containing a time stamp. Jeyaraman teaches that once the client receives the update to a document it stores the cached copy of, then the transformations directed by the update is applied (column 6 lines 10-23), similarly to how the limitations of the claims in the instant application apply the received updated minimum element. Therefore, Jeyaraman in view of Benson teaches an update object is a minimum element of the structured document, the document being composed of a plurality of the elements.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANGELINO N. GORTAYO whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dangelino N Gortayo/
Examiner, Art Unit 2168

/Tim T. Vo/
Supervisory Patent Examiner, Art
Unit 2168

Dangelino N. Gortayo
Examiner

Tim T. Vo
SPE